What policy evidence for a european strategy of sustainable development in mountain regions?

Gløersen, Erik ; Mader, Clemens ; Ruoss, Engelbert

Abstract: The aspiration to implement evidence-based policies has led to an increased focus on quantitative indicators and targets defined at the European level as instruments for designing policy measures and assessing their impact. The authors argue that this constrains debate and has hindered the elaboration of a proactive European strategy for sustainable development in mountain regions. Mountain territories have highly diverse social, economic and physical characteristics; their shared traits in terms of ecological fragility, economic development challenges and exposure to natural hazards are not reflected in mainstream datasets. Two complementary instruments are proposed to produce and present evidence for sustainable resource management and processes: the Nexus Model and the Sustainability Profile Matrix. Both tools entail using evidence that is adapted to the social and economic characteristics, potentials and challenges of each locality or region. At the same time, they make compilations of evidence at the transnational and European levels possible. The objective is to enable local, national and transnational authorities to use territorial diversity as a lever in their policies, within multilevel governance in human, economic and natural resource management. L'aspiration à mettre en œuvre des politiques basées sur des faits tend à encourager l'utilisation d'indicateurs et d'objectifs quantitatifs définis à l'échelle européenne pour élaborer des mesures et pour évaluer leur impact. Les auteurs avancent que cela réduit le champ des discussions et empêche la création d'une stratégie européenne volontariste pour un développement durable des régions de montagne. Les territoires de montagne ont des caractéristiques sociales, économiques et physiques très variables ; leurs points communs en matière de fragilité écologique, de défis de développement économique et d'exposition aux risques naturels ne sont pas pris en compte par les données conventionnelles. Deux outils complémentaires permettant de compiler et de présenter les faits pertinents pour une gestion durable des ressources sont proposés : le modèle Nexus et la matrice de durabilité (Sustainability Profile Matrix). Ces deux outils reposent sur la constitution d'une base factuelle qui reflète les caractéristiques socio-économiques, les potentiels et les défis de chaque localité ou région. Cependant, ils permettent aussi la compilation d'informations aux niveaux transnational et européen. Cela doit permettre aux administrations locales, nationales et transnationales d'utiliser la diversité territoriale comme levier dans leurs politiques, dans le cadre d'une gouvernance multiniveau des ressources humaines, économiques et naturelles.

Other titles: Quelle base factuelle pour une stratégie européenne de développement durable dans les régions de montagne?

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What Policy Evidence for a European Strategy of Sustainable Development in Mountain Regions?

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Introduction

1 The European Structural and Investment Funds (ESIF) are one of the European Union's main policy tools. The sum of actions undertaken with support from these funds constitutes the Union's Cohesion policy. There are a number of reasons for which this policy could be expected to actively promote sustainable resource management development in Europe's mountain regions.

2 First, the European Union has an ambitious sustainable development strategy, last reviewed in 2009 under the heading *Mainstreaming sustainable development into EU policies* (European Commission, 2009). Sustainable development is integrated in the Europe 2020 strategy, the European Commission's 10 year strategy adopted in June 2010, which aims to deliver 'smart, sustainable and inclusive' growth.

3 Second, the particular importance of mountain areas for Europe's resource management and sustainable development has been extensively documented. The 2010 European Environment Agency report *Europe's ecological backbone: recognising the true value of our mountains* (European Environment Agency, 2010) notes that European mountain areas concentrate most of Europe's biodiversity hotspots, provide essential ecosystem services and function as water reservoirs for the continent as a whole.

4 Third, the Treaty on the Functioning of the European Union stipulates that the European Union pay "particular attention [...] to [...] regions which suffer from severe and permanent natural or demographic handicaps such as [...] mountain regions" (TFEU, Article 174).

5 Fourth, one would expect the 'smart specialisation' principle, which is now compulsory for EU Member States[1], to favour sustainable resource management and a better use of the human, social and ecological potential of mountain areas. The smart specialisation approach is a vehicle for implementing the place-based development philosophy (Barca, 2009; Barca, McCann, & Rodríguez-Pose, 2012) which inspired the last round of reforms in EU Cohesion policy (McCann & Ortega-Argilés, 2015).

6 Although smart specialisation and place-based development approaches have been applied in mountain areas as part of ESIF-sponsored activities, European-level mountain strategies have not emerged. The present article explores the hypothesis that a key obstacle to arriving at such a strategy is the lack of an appropriate evidence-base. With an appropriate evidence-base, European Cohesion Policy would be led to pro-actively address distinct kinds of market failures that limit sustainable resource management in mountain regions. Declarations of principle favouring sustainable development are currently accompanied by policy essentially relying on bottom-up initiatives.

7 This is not to say that an appropriate evidence-base would be sufficient for such a strategy to be adopted and implemented: major obstacles would need to be overcome, such as the highly sectoralised policy-making systems at the national and European levels, the constraining realpolitik of Member States focusing on individual net contributions in EU budgetary negotiations, and a Europe 2020 strategy in which the objectives of growth and jobs overshadow other concerns (Aiginger, 2014). Nonetheless, this article shows how the lack of an evidence-base reflecting recurring market failures in the use of mountain resources complicates the establishment of mountain areas as an operational category of European Cohesion Policy. It proposes new approaches, which could help to fill this gap.

8 This analysis pursues two sets of objectives. From a theoretical perspective, it aims to show that debates over multi-level governance and public management can inform the discussion on the production of evidence for territorial policies. At a more practical level, and as a contribution to debates on the future of Cohesion Policy after 2020, it suggests concrete measures to promote sustainable resource management in mountain areas.

The role of evidence in european cohesion policy

9 Debates on evidence-based policy-making (EBPM) were particularly intense during the early 2000s, a reaction to the UK New Labour government's extensive adoption of its principles (De Marchi G, Lucertini G, & Tsoukias A, 2016). More generally, the notion of EBPM has influenced territorial policies and planning in a number of European countries. This trend reflects the ambition of policy makers to base territorial policies on comparable and reliable evidence (Bovar & Peyrony, 2006; Faludi & Waterhout, 2006a, 2006b; Sinz & Aring, 2006). At the European level, the *Territorial Agenda 2020*, adopted by ministers responsible for spatial planning and territorial development in 2011, argues that the place-based approach to policy-making "implements the subsidiarity principle through a multilevel governance approach" and that it is based on the principles of "horizontal coordination, evidence informed policy-making and integrated functional area development" (TA 2020 (2011), p. 4).

10 At the European level, there has traditionally been a strong focus on quantitative indicators, as part of an effort to demonstrate the added value of Community policies.

This tendency has been reinforced by the result-orientation of European Union Cohesion Policy (Barca and McCann, 2011), which entails strengthened efforts to produce measurable change (Gaffey, 2013). Similarly, the definition of target values in the Europe 2020 strategy (European Commission, 2010), adapted in national reform programmes, has contributed to focus the elaboration, monitoring and evaluation of policies on quantitative measures.

11 This results -orientation of policies, interpreted as the need to generate measurable change, raises different types of issues. First, the focus on quantitative indicators may become an ideological and practical straightjacket. As illustrated by the debates over Gross Domestic Product (GDP) and the Human Development Index (HDI), the normative implications of measures of regional development are not necessarily congruent with the objectives and strategies of individual regions (Decancq & Schokkaert, 2013; Schrott, Gächter, & Theurl, 2015).

12 Second, indicators tend to be interpreted as measures of 'performance', including in situations where the unit of statistical observation cannot be equated with a 'performing organisation'. Notions of 'regional economic performance' (e.g. Becker, Egger, and Von Erlich 2010; Crescenzi and Rodríguez-Pose 2012; Paci and Marrocu 2013) or 'regional environmental performance' (Halkos & Tzeremes, 2013) reflect this type of fallacy.

13 In its 2009 working paper *Territories with Specific Geographic Features*, the European Commission found that mountainous regions and other categories of geographical features "are far from constituting homogenous groups of regions". Setting up specific regional development programmes would therefore not be purposeful (Monfort, 2009). This finding was mainly based on the observation of GDP per capita and unemployment figures at the level of NUTS 3 regions, which were found to be equally dispersed in mountain regions as in European regions in general. Combined with the scant political support for dedicated measures at the level of Member States, such findings encouraged the adoption of only limited provisions of Cohesion Policy for mountain regions. ESIF programmes may in this areas modulate co-financing rates and to a wider extent encourage coordinated management of the natural resources and address problems of accessibility and remoteness. Finally, there are dedicated schemes to compensate mountain farmers for the disadvantages they face (European Commission, 2015). These measures do not amount to a proactive European strategy for sustainable development in mountain areas.

European cohesion policy as a framework for sustainable resource management

14 The reliance on bottom-up dynamics in European Cohesion Policy is epitomised by the 'partnership principle', which has played a central role since the 1993 reform. For the European Commission, this principle implies that Cohesion Policy programmes are "developed through a collective process involving authorities at European, regional and local level, social partners and organisations from civil society" (European Commission, 2014b). Observers note that partnership may appear as an ambition of the European Commission, but that in day-to-day activities it is not necessarily given priority, particularly with regard to the involvement of civil society in decision-making processes (Batory & Cartwright, 2011). However, specific development challenges of mountain areas

are primarily addressed through these partnerships and as part of the "bottom-up" elaboration of projects with ESIF co-funding.

15 Bottom-up approaches are consistent with prevailing positions on sustainable development, which argue for reform of existing political, economic and social systems while not challenging their fundamental features. The Brundtland Commission stated that sustainability "meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987). Therefore it is not a biocentric but an anthropocentric concept (Anderson *et al.*, 2012), focusing on preferences and needs of the population. It is furthermore intergenerational, combining an assessment of current situations and a prediction of future transformation, needs and values. Following this line of argument, sustainability presupposes a dialogue between stakeholders allowing them to express their priorities, objectives and values. It cannot be defined by European or national top-down policies or by science alone.

16 Correspondingly, sustainable resource management requires actions embedded in territorial networks of actors. Regional and local stakeholders have the hands-on responsibility for implementing current and future sustainable development measures. Transformative sustainability processes require that young and old, policy makers and practitioners, educational bodies and research organisations are involved together (Mader *et al*., 2015). Admittedly, the environmental values and preferences of future generations cannot be predicted. The objective, nonetheless, is to ensure that current decisions are not regretted in the future. Aiming for sustainable development thus also means to aim for decisions that will be appreciated by future generations (Anderson *et al.*, 2012). The involvement of a wide range of stakeholders helps to identify natural resources, cultural values, and environmental and traditional knowledge acquired over centuries. These are important for preserving the opportunity for future generations to address their own challenges.

17 Innovative governance concepts, methodologies based on public-private partnerships and outcome-oriented public management could improve the sustainability of local development. Outcome-oriented public management (Schedler & Proeller, 2010) represents a responsibility-based approach to introduce 'New Public Management' practices into the governance systems at all levels. This echoes discussions over a more performance-oriented Cohesion Policy during the preparations of the 2014-2020 programming period. The High Level Group Reflecting on Future Cohesion Policy (2011) argued that the selection of objectives should be a "*deliberative process*", which necessarily would lead to different results depending on the territorial setting. There should neither be a "*'dashboard of indicators' for the EU as a whole*", nor a "*'menu of indicators' from which Member States can choose*". Instead, it advocates a system in which general principles are agreed upon at the European level, and where individual territories define indicators measuring progress towards their specific development objectives.

18 These proposals lead to reflections on the respective roles of bottom-up and top-down processes in European Cohesion policy. Currently, Cohesion Policy objectives and priorities are defined as part of partnership agreements with Member States, while programming documents are elaborated in dialogue with sectoral authorities, involving regional authorities and bodies. Outcomes are monitored centrally through complex systems of predefined indicators, so as to ensure that activities contribute to the objectives of Cohesion Policy and the Europe 2020 strategy. One can imagine an alternative 'pro-active bottom-up approach', whereby efforts at the European level would

focus on defining shared methods to assess regional situations and to monitor outcomes, rather than on indicators as such.

Principles for a new approach of 'policy-relevant evidence'

19 Evidence to inform sustainable development policies within Cohesion Policy would first need to facilitate dialogue and comparison, while better taking into account the uniqueness of each regional and local situation. Second, it would need to help actors identify underlying causal processes and target strategic levers for change. Development strategies need to be informed by evidence that is congruent with each territory's ambitions and objectives. Finally, evidence should make it easier to elaborate and implement strategies in a spirit of horizontal and vertical coordination. This requires shared instruments and frameworks, but with sufficient flexibility to allow actors at all levels to apply them with a sense of ownership of the outcomes.

20 European Cohesion policy could in this respect draw lessons from a variety of transnational initiatives that seek to promote more sustainable forms of development. The global Open Government Partnership (OGP) launched in 2011, for example, seeks to make governments more effective and accountable. It pointed to the need for new governance models in light of recent advances in IT communication systems. The 69 participating states commit themselves to promote transparency, empower citizens, fight corruption, and harness new technologies to strengthen governance and institutional regimes. The CHERPLAN project (Enhancement of Cultural Heritage through Environmental Planning and Management), implemented between 2011 and 2014 within the framework of the 'South East Europe' transnational cooperation programme, used planning and management tools such as geographic information systems (GIS) to combine heritage conservation and development in a number of localities (Nared & Razpotnik, 2014; Ruoss & Alfaré, 2013). The project produced guidelines for a more integrated approach to development, framed as an "*Environmental Planning Model for Cultural Heritage Sites in South Eastern Europe*", targeting the protection, modernization, promotion, and sustainable development of heritage sites (Ruoss, 2016; ZRC SAZU, 2014).

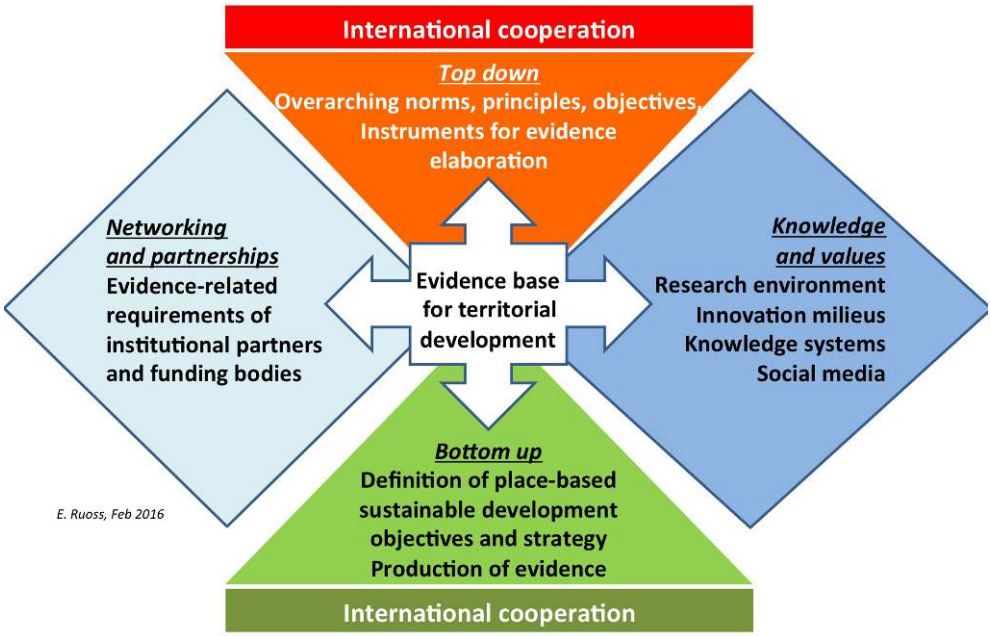
21 These examples illustrate how local and national actors can benefit from top-down guidance in pursuing change, and furthermore, that these new multi-level forms of public policies entail new ways of elaborating evidence. The underlying models, both in terms of policy-making and of evidence production, can be described as frameworks for bottom-up processes designed in a top-down way. This has also been referred to as transformational leadership (Bass & Avolio, 1994; C. Mader, 2013b).

22 Multi-level governance and government need to take into account the ambitions and objectives that are specific to each territory. The 'optimum' towards which societies strive constitutes a complex, evolving and value-laden benchmark. When promoting sustainable development, therefore, one needs to involve stakeholders, taking into account their experiences, knowledge and ambitions (Mader, 2013a; Pirson & Lawrence, 2010). This leads to the adoption of place-specific quantitative benchmarks, and the definition of indicators becomes part of a local capacity-building process. Benchmarking thus becomes 'benchlearning' through capacity building and peering between regions.

23 Such approaches are theoretically grounded in the concept of social-ecological systems (SES), established by Elinor Ostrom (McGinnis & Ostrom, 2014) and closely linked to complex-systems theory for human-environmental interfaces (Duit, Galaz, Eckerberg, & Ebbesson, 2010; Scholz, 2011). This theory's elaboration of notions of uncertainty, emergence, multi-scale dynamics, and self-organisation implies that top-down decision-making, norms, objectives, and targets are not sufficient for establishing a strategy for sustainable development. Policies need to build adaptive capacity by responding to local and regional specificities and by encouraging a diversity of strategies.

24 This points to a framework for evidence elaboration that combines top-down and bottom-up dynamics, as illustrated in Figure 1. European and national authorities define overarching norms and principles and objectives, while concrete, place-based sustainable development strategies are elaborated and implemented within this framework at the level of individual regions and localities. Similarly, territorial evidence is produced within regions and localities with the aid of instruments provided at the European and national levels; this ensures that evidence is consistent and can be aggregated, but also allows that individual territories construct an evidence-base that reflects their challenges, opportunities, and objectives. A number of additional dimensions, however, intervene in the evidence elaboration process, as illustrated in Figure 1. Actors at all levels are embedded in networks and partnerships, which also generate requirements for producing evidence. For example, a partner providing funding in the context of a Public-Private Partnership (PPP) may require information to assess the financial viability of projects, or to monitor their implementation or socio-economic impact. Additionally, social media is playing an increasingly important role in the generation and diffusion of knowledge and values. Public authorities and territorial development actors can find it difficult to assert themselves in these complex systems of requirements and influences. International cooperation contributes both to define the norms, objectives and instruments (top-down dynamics) and to help local and regional actors to elaborate strategies and to produce evidence (bottom-up dynamics). Evidence production then becomes a component of a multi-level governance system in which change and development is initiated at all geographical scales.

Figure 1: The integrated approach to territorial development policy



E. Ruoss, Februar 2016

Possible ways forward: the nexus model and sustainability profile matrix

25 The purpose of this section is to describe two complementary and synergetic instruments – the Nexus Model and the Sustainability Profile Matrix - that could be mobilised to produce such evidence. The Nexus Model is a tool to develop structured representation of the links between the geographic characteristics of a territory and its development opportunities and challenges. Complementing this is the Sustainability Profile Matrix (SPM). The SPM is a sustainability assessment and stakeholder learning tool which, as a participative planning instrument, reflects their values and leads towards a holistic unmderstanding of present challenges and future opportunities.

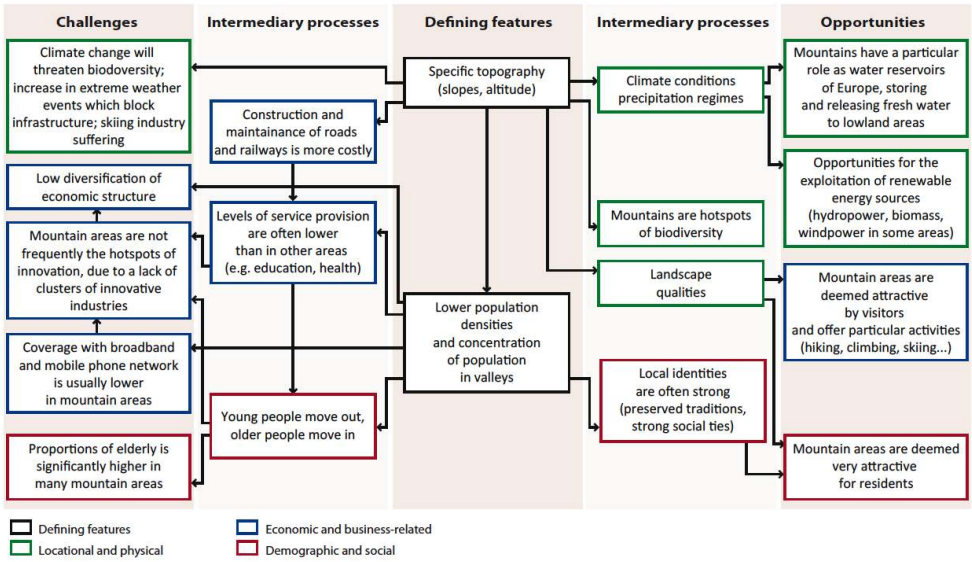
The Nexus Model

26 The Nexus Model was developed as part of the GEOSPECS project (Geographic Specificities and Development Potentials in Europe), funded by the ESPON programme (European Observation Network for Territorial Development and Cohesion) (University of Geneva *et al.*, 2012). This project explored how geographic categories such as mountain regions, islands and sparsely populated areas could become objects of policy-making at the European scale. The enquiry on the specific development challenges and opportunities of these types of territories was triggered by the previously mentioned article 174 of the TFEU. The idea was not necessarily to design specific policy interventions for mountain regions, islands or sparsely populated areas, but rather to get a better understanding of

how these categories could guide policymaking. The hypothesis is that, despite the diversity of social, economic and environmental situations in, for example, mountain regions, there nonetheless may be parallels in paths and processes of development.

27 Based on a series of case studies and literature reviews, the project defined the distinctive features of mountain regions. These features can be found in the middle column of a table of five columns (Figure 2). The two right columns describe intermediate processes helping identify development opportunities based on these specificities, while the left side of the table lists development constrains. This Nexus Model for a territorial category (in this case, 'mountain regions') provides a general framework for the assessment of a regional or local situation. It allows for a rich synthetic representation of processes linked to a specific geographic setting, potentially including for example self-reinforcing trends (positive feedback loops) or possibilities for transforming of apparent constrains into opportunities. It is different therefore from other models such as the 'SWOT matrix'[2], which is not place-based (territorial defining-features are not a starting point of the analysis), focuses on individual traits rather than on interactions, and invites users to classify features as either 'positive' or 'negative' rather than to explore how obstacles could be transformed into possibilities.

Figure 2 : Generic Nexus Model for European Mountain Areas



Based on a model initially developed by Martin F. Price and Diana Borowski (Centre for Mountain Studies, Perth College UHI) as part of the ESPON GEOSPECS project

28 The generic Nexus model for a geographic category (e.g. mountain regions) is a starting point for exchanges with local and regional development stakeholders in concerned areas. Comparing features of mountain areas identified at the European level with their own situation, they may position themselves within the category and, when needed, identify subgroups. The use of the Nexus Model as an input to the revision of the Swiss Federal strategy for mountain regions and rural areas gives an indication of its utility (Mayer, Baumgartner, Gløersen & Michelet, 2014a, 2014b). There, the process led to the identification of four sub-groups: periurban rural regions, peripheral rural regions, Alpine tourism centres, and small and medium-sized towns and rural centres. For each of these sub-groups, specific Nexus Models were developed; these may reiterate general

features for mountain areas, but they also add defining features, intermediary processes, and challenges/opportunities specific to the sub-group. Overall, this allowed for a nuanced discussion of how different territorial categories relate to one other. Relations between the general category of 'mountain regions' and sub-categories identified in different parts of Europe would better inform the debate on how the TFEU directive to play 'particular attention' to these regions could be operationalised.

29 The Nexus Model has not yet been tested in the framework of participative processes of spatial planning and strategy elaboration. In this context, the purpose of the model would be to first synthesise perceptions of specific geographical features and views on how they influence prospects for development. Groups of stakeholders would be asked to identify the most relevant permanent geographical specificities of their territory. They could then compare the implications of these specificities within their territory with general models elaborated at the European or national levels, and progressively elaborate their own Nexus Model. These 'territorial Nexus Models' may then form a basis for discussions between neighbouring areas and between different levels of policy making, can also lay the groundwork for in-depth and participative sustainability reflections pursued through the Sustainability Profile Matrix, described below.

30 The repeated use of the Nexus Model as a framework for internal discussions and exchanges between localities and regions can contribute to a detailed and dynamic characterization of the 'territorial resources' of mountain territories. Comparisons of models between localities and levels could provide the basis for a multi-level assessment of opportunities and constraints. For example, challenges such as outmigration of youth and a lack of attractiveness for women may appear as important features at the level of individual rural mountain communities, but less prominent at the regional level. Inversely, some wider-scale development opportunities may be identified by regional actors, yet these may be less embraced at the local level. Patterns identified in these ways could inform how actors could be best mobilised to address these issues.

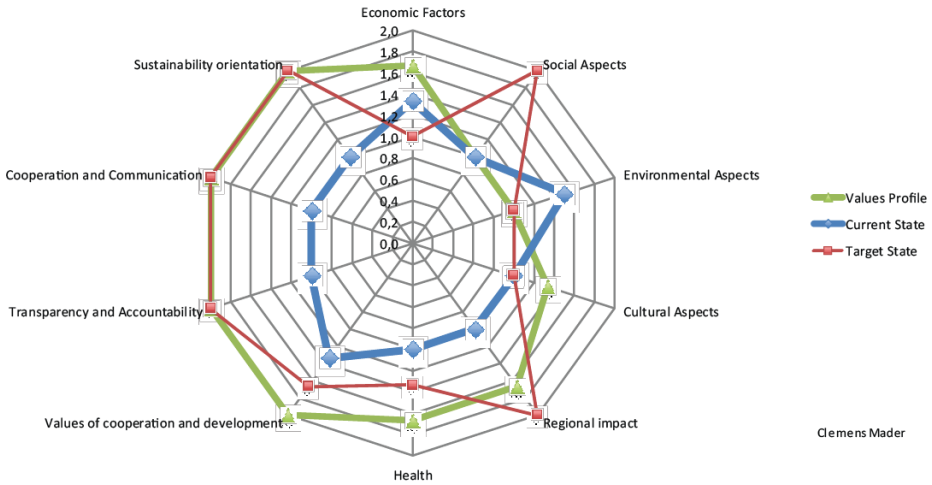
The Sustainability Profile Matrix (SPM)

31 As described above, the Nexus Model describes the geographic characteristics of a region, and the challenges and opportunities that need be addressed for its future development. The Sustainability Profile Matrix (SPM) steps in at this point to reflect the values of the region with regard to sustainable development. Through transformative processes of stakeholder participation, indicators are developed for a regional sustainability profile, identifying the current state of development as well as the target state. (Mader & Leitenberger 2015).

32 The SPM is a process-oriented instrument, developed at Leuphana University of Lüneburg (Germany) for assessing regional or institutional initiatives according to their specific contexts and impact (D. C. Mader & Leitenberger, 2016). Although sustainability is a normative concept, it is difficult to assess due to site-specificity and complex interrelationships between places and between actors. The SPM can help construct a shared understanding of diverse local and regional perspectives on issues and concepts. For each locality or region, ten categories of indicators that reflect a holistic understanding of sustainable development are chosen (Figure 3). For each of these ten categories, three indicators are selected. Indicator values range from 0 (unfavourable

situation) to 2 (favourable situation). The value displayed along each of the 10 axes corresponds to the average of the three related indicators.

Figure 3 : Example of a Regional Sustainability Profile Matrix



33 However, indicators are not the starting point of the process. They are the outcomes of exchanges in which stakeholders contribute with their experience, knowledge and values. In the course of this assessment, data, reports, photographs and other resources are referenced and linked in a database connected to the tool. The selection of indicators is therefore the outcome of a process in which quantitative and qualitative evidence, including the perceptions, opinions, and ambitions of territory, are compiled and discussed.

34 The region of Waldviertel in Lower Austria (Austria), applied the SPM in 2014/2015 with support of a local researcher from University of Applied Studies IMC Krems. Local stakeholders co-created their profile by indicating relevant regional indicators for sustainable development and assessing those pertinent to the present and desired future states (Manhart 2015). Local researchers and development practitioners formed part of the process, aiding the selection of indicators deemed appropriate and responding to the particular needs of the region regarding sustainable development. The indicators in this case, for example, reflected the primacy of agriculture and handicrafts in the region's economy. A high mountain region with a large tourism sector, retreating glaciers, and diminishing water availability would for example be likely chose other indicators. Different regions thus may choose to measure different elements. In all cases, indicators are chosen with a long-term perspective, and are intended to monitor both broad and subtle changes over time.

35 As illustrated by Figure 3, the SPM displays three values for each territory: its 'values profile', 'current state' and 'target state'. The 'values profile' synthesises stakeholder opinions on how the experience, values, potentials, weaknesses and history of their

territory influence its capacity to develop in a positive or negative way within each of the fields. It is in some respects comparable to central column in the Nexus Model, in which 'defining features' of the considered territory or geographic category are listed. By comparison, the 'current state' line is based on an assessment of current and past initiatives that have an impact on the regions' development. Its purpose is to take stock of each territory's current situation.

36 Finally the 'target state' line represents the ambitions and goals of the stakeholders. These are based on a holistic analysis of their sustainable development perspectives for the region. New compromises may emerge as part of the SPM process. Stakeholders may for example agree on promoting a 'negative' trend for a given indicator. In Figure 3, the ecological 'target state' is lower than the 'current state'; this could correspond to the situation of a local community surrounded by 'untouched wilderness', but which is considering that a reasoned exploitation of its resources would be required for its sustainable development.

37 In the course of elaborating the SPM, stakeholders exchange their understanding of the current state and share future development ambitions. Evidence from the Nexus Model can be carried forward, so as to capitalise on the complementarity of the two instruments. This allows considering the regional system as a whole, combining multiple dimensions of sustainable development.

38 For each region, the SPM contributes to the elaboration of sustainability strategies that are grounded in specific local needs, potentials and weaknesses. At the horizontal level of dialogue and peer exchange between regions, the SPM serves as a tool for learning, while widening perspectives for synergies and cooperation. Stakeholders may be inspired by other regions' choices of indicators or, on the contrary, find alternative ways of solving specific challenges. Vertical dialogue and cooperation between regional and local authorities on the one hand, and national and European ones on the other, can also be facilitated by the SPM. It helps to understand regionally-specific development characteristics, processes and ambitions by making it possible to select corresponding indicators. The SPM is therefore an alternative to the adoption of national or European target values, which tend to be applied to localities and regions without sufficiently taking into account their specific sustainable development challenges and needs.

Comparison of the two approaches

39 The Nexus Model and Sustainability Profile Matrix have been described as complementary synergetic instruments to better understand local and regional development processes, challenges and opportunities. They make it possible to define indicators and targets accordingly. A more systematic comparison of these two instruments makes it possible to better convey their respective modes of focus and implementation. Table 1 characterises each process according to 15 criteria.

40 The table shows complementarities between the two instruments, notably in terms of time frames and questions that are described as 'mental frameworks'. These parameters need to be considered in a planning process in which the instruments are used successively. Each approach can also be used for other purposes than planning for a specific locality or region. The Nexus Model can be used to describe opportunities and challenges pertaining to a category of territories, while the Sustainability Profile Matrix

can be applied not only to territories, but also to companies or sectors of activity. This however does not affect their compatibility.

41 The instruments contribute to the comparison between localities and regions in different ways. The Nexus Model focuses on parallel processes, and on the identification of levers of change; the Sustainability Profile Matrix identifies relevant indicators and targets, and emphasizes the distinct meaning and implications of a specific indicator for the considered territory.

42 The main added value of these instruments for constructing an evidence-base is that local and regional actors determine the premises on which evidence is produced, this nonetheless still within a framework that makes horizontal comparisons between territories and vertical integration with the national and European levels possible. Criteria of 'good' and 'bad' development and hierarchies of priority do not part of the framework for evidence elaboration. Instead, evidence production becomes an integrated part of multi-level governance. Potential complementarities as well as contradictions between territorial strategies at different levels or between different territories can be approached by comparing the ways in which each region and locality chooses to produce its own evidence.

43 The notion of a public policy 'intervention logic', already playing a central role in European Cohesion policy (Gaffey, 2013; Garretsen, McCann, Martin, & Tyler, 2013), could be strengthened within such a framework. The European Commission (2014a) argues that "the main focus is not a counterfactual ('how things would have been without') rather a theory of change ('did things work as expected to produce the desired change')" to justify an approach that "does not mainly produce a quantified estimate of the impact" but "produces a narrative". This narrative is stronger when it is based on an understanding of issues, opportunities, challenges and processes that are embedded in territories, as opposed to one inspired by centrally defined targets and objectives.

Criteria	Nexus Model	Sustainability Profile Matrix
Purpose of the model	Synthesise processes through which selected geographic, social, economic and environmental characteristics generate development challenges and opportunities.	Define indicators specifically adapted to the values, culture and environment of each region.
Geographical focus and scale	Regions with geographic specificities or other forms of 'defining features'	Applicable in any geographic/ regional context or institutional setting
Target groups	Decision makers, public and private stakeholders of local/regional development, national and European bodies dealing with territorial categories	Regional/local stakeholders, policy makers, networks (sectoral, thematic)

Stimulus for development process	Needs and local specificities, such as territorial resources, to promote development	Interests of stakeholder groups for sustainable development based on local resources (natural, cultural, financial, human,...)
Methodologies	Desktop research and case studies, followed by stakeholder involvement, targeted process adapted to local particularities	Value-oriented assessment of local and regional institutional initiatives for sustainable development, adapt learning tools to local situation Standardised checklist elaborated during participatory process with definition of targets and indicators, periodic monitoring
Relations between actors that are promoted	Facilitate the formulation of a shared understanding of regional/local defining features, opportunities and challenges. Nuanced and critical discussion of territorial categories (e.g. mountains, 'shrinking regions') across geographical levels.	Making peer learning possible
Main processes that are focused on	Planning process, elaboration of regional/local development strategy	Monitoring, support transformation processes towards sustainable development
Facilitator and process moderation	Members of the local community / regional organisations and/or external consultants for territorial Nexus Models. National and European institutions and/or external consultants for Nexus Models that describe a given territorial category.	Member of the local community /regional organisations and/or external consultants
Time frame of the processes	Short to mid-term, focus on how to improve policies immediately, models to be updated continuously.	Mid- to long-term, as support to transformation processes

Mental framework	What territorial categories (e.g. mountainous, touristic, industrial, lagging…) are relevant for each region/ locality? What types of opportunities and challenges can be identified on this basis?	What does sustainable development mean for the region? What is the contribution of regional development to sustainability within and outside the region?
Focus of consensus building	Agreement on defining features, intermediary processes, opportunities and challenges.	Agreement on a set of indicators that is adapted to regional values and aspirations.
Outcomes of the processes	Policy framework, identification of policy levers, nuanced positioning within territorial categories.	Targeted sustainable development and learning process, transformational leadership
Expected impact	Decision making and implementation of targeted actions	Decision support, Long-term sustainable development process
Costs of implementation	Low for internal processes, high when used systematically	Low for internal processes, high when used systematically
Timeframe and periodicity of implementation process	Permanent planning process within defined time frame	Target and indicator definition and afterward periodic monitoring

44 For mountain regions, synergetic evidence elaboration is essential for establishing parallels between territories that *a priori* appear very diverse, as asserted in the previously mentioned 2009 working paper of the European Commission (Monfort, 2009). Mountain areas are not a homogenous category with regard to levels of development, specific challenges, or opportunities. The time differentials between their respective processes of agricultural modernisation, industrial development and transition toward service-oriented economies imply that statistical comparisons at any given time provide limited insight into the relevance of mountain regions, as a category, for European Cohesion Policy (Gløersen, Price, Dax, Borec, & Giordano, 2016). Synergetic evidence elaboration, as envisioned in the dual application of the Nexus Model and the SPM, can reveal parallels in processes and issues beyond these time differentials when they exist. In the SPM, similar indicators may be chosen, but with different ‘current’ and ‘target’ states; in the Nexus Model, feedback loops, opportunities and challenges may correspond, even if development levels are different. The approaches sketched above, therefore, will allow mountainous regions to emerge as an operational category of Cohesion Policy. This has not been the case with currently prevailing methods of defining, producing and interpreting evidence.

Conclusions

45 The Nexus Model and the Sustainability Profile Matrix make it possible to go beyond the idea that a 'case by case' approach need prevail in sustainable development policies for territories with geographies specificities such as mountains. This does not imply that all mountain regions are thought to be similar. However, the structural character of recurring traits in some types of mountain territories may become more obvious. As a consequence, rather than being dismissed as manifestations of local or regional 'uniqueness', these aspects of territorial resources in mountain areas become levers of policy-making that can be incorporated in European and Member State-level strategies.

46 The Nexus Model and the SPM can therefore help local, regional and national policy makers construct an evidence base for sustainable resource management and regional development that is adapted to local situations, yet remains compatible with higher levels of decision-making and wider-scale strategies. This is particularly important for mountain regions, which tend to be dismissed as 'unique', or 'different'. One can go beyond the European Treaty's notion of 'permanent handicaps', and rather focus on mountain regions' unique set of levers for change and development. As opposed to traditional quantified targets and measures of performance, the Nexus Model and the SPM focus on development processes and interdependencies between actors and between territories. The focus is then drawn away from regions of perceived excellence, such as major metropolitan regions that often become benchmarks in terms of labour productivity or research and development intensity. Instead, they help to determine where public interventions can be concentrated to make a difference.

47 This allows reformulating the rationale for policy interventions in mountain regions. These regions should not receive policy attention as 'compensation' for a presumed handicap, but rather because targeted policy efforts would make a significant difference. The Nexus Model and the SPM can be applied in a complementary manner, thus helping define a policy framework from which such targeted efforts can be designed and implemented. In this way, 'territorial diversity', which was promoted as a slogan for territorial cohesion policy in the European Commission's Green Paper on Territorial Cohesion in 2008 (European Commission 2008), could become an operational notion guiding policy elaboration, implementation and monitoring.

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NOTES

1. Smart specialisation strategies focus on regional priorities for knowledge-based development and build on each area's social and economic specificities, available resources and environmental characteristics. It is now compulsory for Member States to develop national and/or regional research and innovation strategies for smart specialisation (RIS3).
2. A SWOT matrix is a grid with 4 cells, in which Strengths, Weaknesses, Opportunities and Threats are listed. The left column describes positive aspects and the right one is devoted to negative ones. Elements linked to internal causes are described in the first line, while those linked to external causes appear in the second line.

ABSTRACTS

The aspiration to implement evidence-based policies has led to an increased focus on quantitative indicators and targets defined at the European level as instruments for designing policy measures and assessing their impact. The authors argue that this constrains debate and has hindered the elaboration of a proactive European strategy for sustainable development in mountain regions. Mountain territories have highly diverse social, economic and physical characteristics; their shared traits in terms of ecological fragility, economic development challenges and exposure to natural hazards are not reflected in mainstream datasets. Two complementary instruments are proposed to produce and present evidence for sustainable resource management and processes: the Nexus Model and the Sustainability Profile Matrix. Both tools entail using evidence that is adapted to the social and economic characteristics, potentials and challenges of each locality or region. At the same time, they make compilations of evidence at the transnational and European levels possible. The objective is to enable local, national and transnational authorities to use territorial diversity as a lever in their policies, within multilevel governance in human, economic and natural resource management.

INDEX

Keywords: mountains, areas with geographic specificities, European policy, evidence-based policy, sustainable development, participatory planning

AUTHORS

ERIK GLØERSEN

University of Geneva, Institute for Environmental Governance and Territorial Development, Spatial Foresight GmbH

Contact : Dr Erik Gløersen erik.gloersen@unige.ch

CLEMENS MADER

University of Zurich, Sustainability Team

ENGELBERT RUOSS

Global Regions Initiative